

near the base by removing a strip of bark one-eighth inch broad and to the wood. If girdled in early summer blossom buds may appear the next spring on the treated limb. If the tree fails to respond it may be grafted over to a fruitful variety. This operation is not as easy as with a deciduous tree but with care should succeed.

Seedlings are particularly adapted to the amateur and to home planting. All are interesting and there is always the chance to get a better variety than any yet known. If, for instance, a seedling of "Fuerte" should be secured with fruit like its parent and maturing at a different season, or more precocious and reliable in bearing, it would be of immense value to the industry.

The avocado fans (if I may use the term) expatiate upon the high food value of the fruit because of its oil content, yet it is probably true that in nearly every home considerable quantities of wholesome fat are thrown away regularly. I believe that it is also true that in every country where the avocado is known it is as highly and universally prized as the sweet orange. There will be little objection if we say the orange is the best refreshing fruit. Then let us leave the explanation for the charm of this peculiar fruit to those deep students of human nature, the psychologists, or to the nutritionists, or to anybody else who may assail the problem; and, if we want to, let us plant an avocado in the front yard—or two of them—or in the back yard or both. Like all human undertakings our project will not want for troubles, but so far as I know, the avocado has not yet suffered seriously from powdery mildew or aphids (thought occasionally there is some spotting by thrips), it has been free from brown rot, codling worms and pear blight, and it has not been a tempter to the robin nor to the small boy.

Citrus Experiment Station, Riverside.

A NEW CASTILLEJA FROM COLORADO.

LEON KELSO

Castilleja flavoviridis sp. nov. Stems one to several, 7-12 cm. high, purplish, glabrate below to tomentose in the inflorescence: leaves narrowly lanceolate, entire or the uppermost sometimes with one or two teeth, 1-3 cm. long, 2-4 mm. wide, the lower glabrate, the upper puberulent: bracts green, 3-parted to the middle or lower; the lateral lobes narrowly lanceolate to setaceous, divaricate, curved, the middle longer and broader, long-acuminate, with a few teeth in the uppermost bracts; as long as or shorter than the calyx, not concealing the flowers, finely villous to floccose: calyx green or somewhat yellowish, short-villous to tomentose, cleft nearly to the middle or less, about 2 mm. lower on the lower side, the lobes cleft 1-3 mm. into acute teeth; corolla 18-25 mm. long; tube yellowish, equaling or much surpassing the calyx; galea yellowish, 4-6 mm. long, pubescent on the back; lip dark green, 3-4 mm. long, its 3 ovate and acute lobes distinctly yellow, 1 mm. long; anthers 2 mm. long.

This plant is nearest related to *C. puberula* Rydberg, from which it differs chiefly in its entire leaves, 3-parted bracts and tomentum in

the inflorescence. Two specimens collected Aug. 6, 1927 on the eastern slope of Bighorn Mountain in the Rocky Mountain National Park, Colorado, alt. 11,300 ft., are in the Rocky Mountain Herbarium at the University of Wyoming. Eight type specimens collected July 28, 1928 on the south slope of Hague's Peak, not far from the former locality, at an altitude from 10,500 to 12,500 ft., are in my collection. Aurora, Colorado, Feb. 16, 1929.

SEQUOIA SEMPERVIRENS IN GRANADA.

In the lovely gardens of Generalife in Granada the guide called my attention to its crowning glory, this "ancient cedar", as he named it. Roughly speaking the tree is about 125 feet in height, and perhaps four in diameter, and already it towers above the others on the hillside. It is a landmark on the skyline, as one looks across the ravine from the Alhambra, or views it from the heights of St. Nicholas. I thought you might enjoy a leaf, and so I culled one for you.

I know nothing of its history, but the guide book speaks of trees planted by the Duke of Wellington.—HARRIET N. DIMOND, Seville, Spain, in 1926.

It was perhaps shortly after my return from Palestine and Syria that your letter came from Spain, enclosing a spray of our Redwood, *Sequoia sempervirens*, from a tree in Granada. Your letter and the facts which it contains have been the subject of much pondering in my mind. A tree 125 feet high and 4 feet in diameter might possibly be about 120 years old. If so, how did Redwood seed get to Spain in that early day? That would be even before the Redwood was first published botanically in 1824 by Lambert in England. Lambert's specimens were collected by Menzies, surgeon of the Vancouver expedition.

It has always been a thought with me that the Redwood must have been first collected (botanically speaking) by Thaddeus Haenke of the Malaspina Expedition, a scientific adventure originated by Carlos III of Spain. This round the world expedition touched at Monterey in 1791 and Haenke botanized there in the dry season (September). Haenke's California material was published, after long delay, by C. B. Presl of Prague in the *Reliquiae Haenkeanae*, but no mention is made of any Redwood under any name, or of any conifer that could be construed as our species. A copy of Presl's great folio is in my library, but I do not possess his *Epimeliae Botanicae*, which lists some of Haenke's things and was published as late as 1849. But the last time I was at Kew I found on page 237 of the *Epimeliae* a record showing that Haenke collected the Redwood while in California. In all probability he collected seed as well as herbarium specimens. Since this was a Spanish expedition seed may have gotten back to Spain. Some of the ship's officers, it is known, collected seed of our native trees.—W. L. JEPSON.